

AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently amended) [[A]] An apparatus comprising:

a multi-layer dewatering fabric; for use in

a dynamic condensation drying apparatus having a hot surface, comprising a multi-layer fabric

wherein the multi-layer dewatering fabric is arranged to sandwich a paper web onto the hot surface.

2. (Currently amended) The apparatus A-dewatering fabric according to claim 1, wherein the multi-layer fabric comprises a paper contacting surface layer and a core having a high higher void volume than that of the paper contacting surface layer, the core having a machine side surface.

3. (Currently amended) The apparatus A-dewatering fabric according to claim 2, wherein a third layer comprising a machine side surface layer is provided on the machine side surface of said core.

4. (Currently amended) The apparatus A-dewatering fabric according to claim 3, wherein the paper contacting surface layer is relatively the finest of the layers, being composed of closely spaced yarns, fibers or particles of small diameter, while and the machine side surface layer, which is coarser than the paper contacting surface layer and finer than the core, is of intermediate fineness being composed of yarns, fibers or particles of a larger diameter and more loosely spaced than those of the paper contacting surface layer.

5. (Currently amended) The apparatus A-fabrie according to claim 3, wherein the core is composed of widely spaced yarns, fibers or particles, or of [[8]] a perforated sheet or membrane layer.

6. (Currently amended - Withdrawn) The apparatus A-fabrie according to claim 1, wherein regions of the multi-layer fabric are treated to render said regions more, or less hydrophilic.

7. (Currently amended) The apparatus A-dewatering-fabrie according to claim 2, comprising a core of a woven base cloth, a single or composite perforated membrane or a spiral-link base cloth, having a batt of staple fibers needled to each face of the base cloth.

8. (Currently amended - Withdrawn) The apparatus A-fabrie according to claim 7 wherein the core is filled with a porous material.

9. (Currently amended - Withdrawn) The apparatus A-fabrie according to claim 8, wherein said porous material filling the core comprises an open celled foam or a sintered plastics material.

10. (Currently amended - Withdrawn) The apparatus A-fabrie according to claim 7, wherein the fibrous batt is coated with a resin and then perforated.

11. (Currently amended - Withdrawn) The apparatus A-fabrie according to claim 2 wherein at least one layer of the multi-layer fabric comprises a sintered structure formed from beads, fibers or other particles of thermoplastics or metal, partially melted and fused together.

12. (Currently amended - Withdrawn) The apparatus A-fabrie according to claim 11 wherein the sintered structure further contains a textile reinforcement such as chopped fibers, a woven fabric felt, a non-woven fabric, membrane or yarns, at least partially encapsulated in the sintered structure.

13. (Currently amended - Withdrawn) The apparatus A-fabrie according to claim 2 wherein at least one layer of the multi-layer fabric comprises a microporous open cell foam coated structure.

14. (Currently amended - Withdrawn) The apparatus A-fabrie according to claim 2 comprising a laminate of a sintered polymer, coating, fine staple batt layer or composite membrane on a core of a spiral link or open structure with a further fine layer of the same or different material as the upper layer on the underside.

15. (Currently amended) The apparatus A-fabrie according to claim 1, made from being composed of materials having high resistance to high temperature and hydrolysis, such as poly(phenylene sulfide) (PPS), poly(etheretherketone) (PEEK), polyetherketone (PEK), polyamide, fluoropolymer, glass, metal, poly(ethylene naphthalate) (PEN) or propylene butene copolymer (PBM).

16. (Currently amended) The apparatus A-fabrie according to claim 15, further comprising a high temperature resistant material, such as nylon, poly(ethylene terephthalate) (PET), polybutylene terephthalate (PBT), polythrimethyleneterephthalate (PTT), poly(cyclohexylylene dimethylene therephthalate) (PCTA) or polyesteramides, arranged to wherein less resistant materials are used in parts of the fabrie which are at least partially insulated insulate parts of the fabric not composed of the materials having high resistance to high temperature and hydrolysis from the hot jet or roll by the high temperature resistant material, such as nylon, PET, PBT, PTT, PCTA or polyesteramides.

17. (Currently amended) The apparatus A-fabrie according to claim 2, wherein the paper contacting surface layer and the core are constituted by a single structure providing zones of differing mean void volume.

18. (Currently amended) The apparatus A-fabrie according to claim 17 comprising a two-ply woven core zone of relatively coarse cross-machine direction or weft yarns and superposed thereon on the paper side of the fabric, a two-ply woven zone of relatively fine cross-machine direction or weft yarns.

19. (Currently amended) The apparatus A-fabrie according to claim 18 wherein the layers are interwoven by means of warp yarns which interlink the weft yarn plies into a single woven structure.

20. (Currently amended) The apparatus A-fabrie according to claim 18 comprising a further ply of finer weft yarns on the cylinder machine side of the core zone which are bound into the a weave structure by warp yarns which pass about the further ply of finer weft yarns and the lower ply of the core yarns.

21. (Currently amended) The apparatus A-fabrie according to claim 17 wherein the core zone comprises a single ply of larger diameter weft yarns relative to the paper contacting surface layer zone.

22. (Currently amended - Withdrawn) The apparatus A-fabrie according to claim 2 comprising a relatively fine woven layer laminated to the paper side of a perforated membrane of synthetic plastics material or resin impregnated fibrous material.

23. (Currently amended - Withdrawn) The apparatus A-fabrie according to claim 22 wherein the perforations of the membrane are tapered with their wider ends adjacent the fine woven layer, and their narrower ends opening from the surface of the membrane at the cooling cylinder side.

24. (Currently amended - Withdrawn) The apparatus A-fabrie according to claim 23 wherein the tapering perforations comprise two notional zones of different void volume, the wider ends forming a core zone of greater void volume, and the narrower ends a cylinder side zone of

lower void volume.

25. (Currently amended - Withdrawn) The apparatus A-fabrie according to claim 22 wherein the perforations are stepped.

26. (Currently amended - Withdrawn) The apparatus A-fabrie according to claim 2, which comprises a structure of sintered particles bonded together by fusion over contact zones, with interstices between the particles, the structure providing a core zone of relatively large particles with large spaces between them and an outer zone on the paper side with relatively fine particles defining a paper contacting surface.

27. (Currently amended - Withdrawn) The apparatus A-fabrie according to claim 26 comprising a further zone on the cylinder side, of relatively fine particles which define a cylinder contacting surface, these zones being created by laying down different sized particles as the structure is built up.

28. (Currently amended - Withdrawn) The apparatus A-fabrie according to claim 26 wherein the zones are merged by transition regions wherein the particle size decreases towards the respective surface.

29. (Currently amended - Withdrawn) The apparatus A-fabrie according to claim 26 wherein the structure of sintered particles includes reinforcing fibers.

30. (New) The apparatus according to claim 1, wherein the hot surface comprises an outer surface of a heated roll.

31. (New) The apparatus according to claim 1, wherein the multi-layer fabric is sandwiched between the paper web and a belt exposed to temperatures lower than the that of the hot surface.

32. (New) The apparatus according to claim 31, wherein the belt is structured and

arranged to contact at least one of ambient air, forced ventilation, refrigerated air, and a reservoir of cooled water.